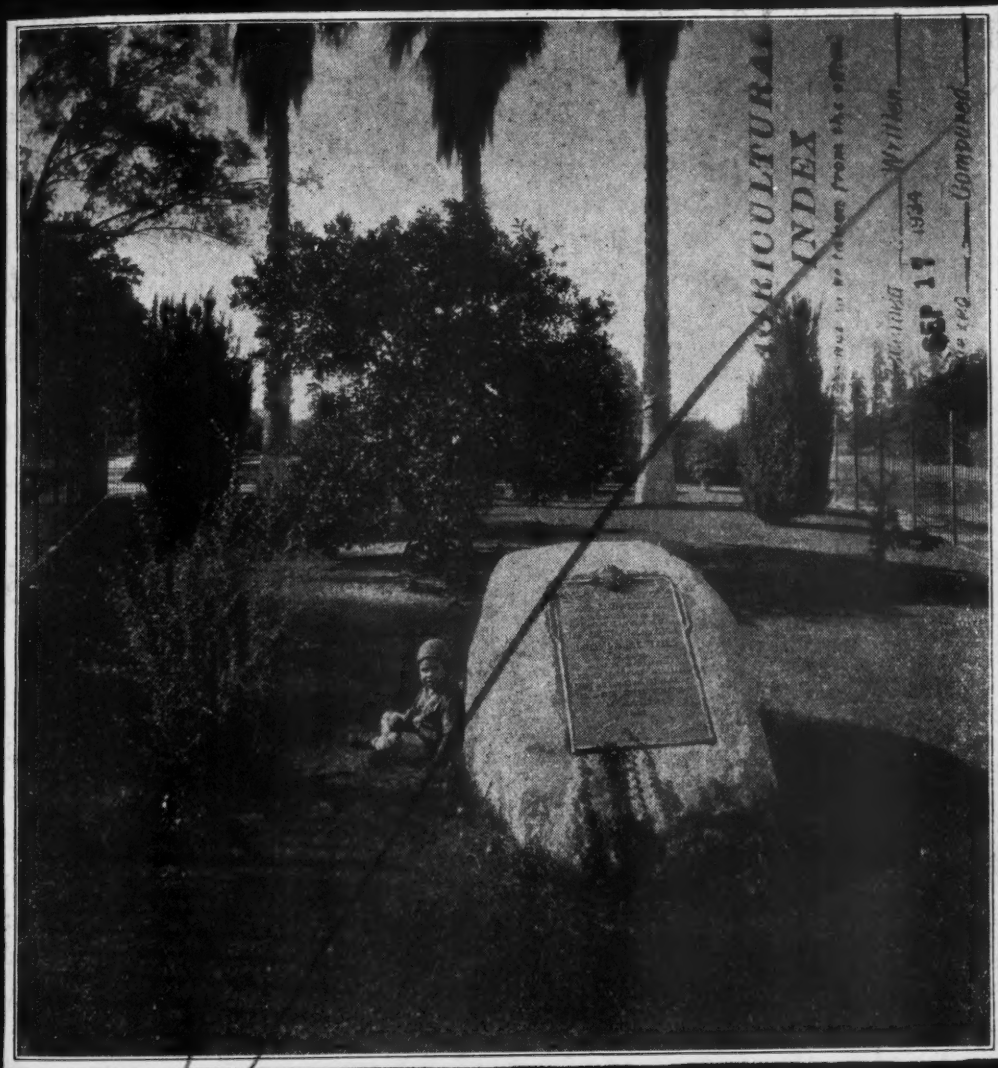


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Page 2

AMERICAN FRUIT GROWER

NATION-WIDE NEWS

THE Northern Nut Growers' Association will hold its 25th annual meeting at the Kellogg Hotel in Battle Creek, Mich., September 10 and 11. In addition to the program, which includes papers on various phases of nut culture in the northern states, an interesting field trip has been arranged to the Kellogg Farm of the Michigan State College. On the farm, under the direction of Prof. J. A. Neilson, one of the most extensive nut cultural projects in the United States is under way.

This project includes the development of a very complete collection of all hardy nut varieties, in addition to various other experiments with nut trees. Other nearby attractions include nut nurseries and a nut grove.

Michigan has been chosen for the 1934 meeting of the association because of the rapid progress the State is making in the development of a nut industry. All who are interested in the culture of hardy nuts will find this meeting of the association of unusual interest.

GEORGE L. SLATE, Sec'y
Geneva, N. Y.

▲ ▲ ▲

FRUIT growers who are also vegetable growers will be interested in the coming annual convention of the Vegetable Growers' Association of America, which will be held at the Royal York Hotel in Toronto, Canada, from August 20 to 23 inclusive. Growers from practically every state in the Union and every province in Canada will be present. Educational and entertainment features will be most interesting. A field trip will include a number of large gardens, the Vineland Experiment Station, and the American Cyanamid plant where nitrogenous fertilizers are made from air.

▲ ▲ ▲

THE Salt River Valley of Arizona is one of the few sections in the United States where date production can be undertaken on a commercial scale. There are approximately 350 acres of dates there, but only a small percentage is in full production, which will not be reached for 15 to 20 years. Once fully established and in bearing, a date garden is worth from \$10,000 to \$50,000 an acre, depending upon the variety grown. Date gardens have been hailed as the most valuable agricultural land in the world. It will be generations, it seems, before any date grower in the United States need worry about over-production of fresh dates, as this nation now imports more than 50,000,000 pounds of dates annually.

▲ ▲ ▲

THE Wenatchee Jim-Hill Growers, Inc., producers of big red apples in the world-famous Wenatchee Valley of Washington, changed its name in February to the Apple Capital Growers, Inc. The more comprehensive name of the apple producers centers greater attention upon the Washington Valley as the "Apple Capital of the World," a slogan used by the area for some time.

A successful Michigan fruit grower who runs a roadside market states that the first he puts on the top of the basket sells his first bushel; that in the bottom sells the next one.

AUGUST, 1934

AMERICAN FRUIT GROWER

(Title Registered in U. S. Patent Office)

VOLUME 54 No. 8

AUGUST, 1934

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Cover Illustration

One of the two original Navel orange trees brought to Riverside, Calif., in 1873 by Mrs. Eliza Tibbets, and transplanted to its present location at the head of Magnolia Avenue in 1902. The monument was erected in 1920 to honor Mrs. Tibbets. The Navel orange originated in Brazil (see March issue).

THE SEARCH FOR PERFECT FRUIT

THE observing fruit grower is constantly on the lookout for fruit of outstanding characteristics. When a twig produces fruit which maintains from year to year a new and distinguishing feature, the fruit is identified as a bud sport or mutant. Many improvements in fruit varieties have been found in this way.

The chemical laboratories of state experiment stations have contributed much useful knowledge in evaluating fruit varieties. The New York Agricultural Experiment Station at Geneva recently discovered, in some freezing experiments, that Sunbeam, a yellow peach originated by the New Jersey Experiment Station, does not discolor when exposed to the air after peeling and slicing. Following a careful chemical analysis, Dr. Z. I. Kertesz found the Sunbeam peach deficient in a tannin-like substance present in all other yellow peaches examined. When this substance was separated from other yellow peaches and added to the juice of the Sunbeam, it too turned brown upon exposure to the air just as all the other varieties of yellow peaches.

Here, then, is the answer to the problem of why yellow peaches turn brown so rapidly after peeling. The importance of the test developed by Dr. Kertesz, which appears in a technical bulletin from the experiment station, lies in the fact that a simple method has been devised whereby the extent of browning that may occur in different varieties of yellow peaches during preserving operations may be measured. Also, by use of the test, the plant breeder will be spared much time in determining new varieties of yellow peaches which will not discolor when exposed to the air. It is also a distinct advantage from the standpoint of the commercial canner, those who freeze peaches, and the housewife.

This is just one typical instance in the development and superiority of new fruit varieties. The search for "the perfect fruit" is doing a lot to make the fruit growers' task easier and more profitable. Equally important, of course, are the discoveries of health-maintaining qualities of fruits. These are bound to result in an increased demand for fruit, as well as in the enlargement of the horizon of every fruit grower.

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Over the Editor's desk

FRUIT growing offers much along the line of romance and interesting stories. Such a story is tied up with the picture appearing on the front cover of our last issue. This particular cherry tree of the Dikeman variety, belongs to Benton Gebhart, a fruit grower at Hart, Mich., who has just completed 50 consecutive years of orchard experience and supervision. Bearing some 325 quarts, picked by 15 pickers, this fruitful tree filled the orders of over 300 customers on Mr. Gebhart's roadside stand the following Sunday.



Fruit Aids Fruit

IT WILL no longer be necessary to use sulphur (sulphur dioxide fumes) in the drying of apples and other fruit whose natural white color must be preserved. Recent studies by the U. S. D. A. have resulted in the important discovery that spraying the freshly cut fruits with pineapple juice will prevent discoloration.

Sulphuring of many dried fruits, such as apples, apricots and peaches, has been practiced until recently with little or no objection on the part of the consumer. As a result of undue publicity on the part of a few individuals, also active in the campaign against spray residues, consumer attitude on this question has been undergoing a change. While it is a deplorable fact, and unfortunate for the fruit industry that prejudice toward a valuable food product has been created, it is equally fortunate that an alternative treatment has been found which will avoid these ungrounded fears and utilize even more fruit for human consumption.



Don't Sell A Dishonest Product

FRUIT growers usually think of their enemies in terms of bugs, blights and scabs rather than in anything they themselves might do. Poor orchard practices have long been considered among the worst enemies of success from the standpoint of fruit production. But how about the enemies of good salesmanship?

In any business where satisfied customers and repeat orders are a criterion of successful marketing, the question of quality must be given paramount consideration. Consumers as a rule do not mind buying lower grades when they are labeled, graded and priced as such; but whenever they are deceived and disappointed in a product, it is difficult to fool them twice.

In addition to the unfavorable sales reaction which comes from the marketing of immature fruit, there is the equally unsatisfactory practice of placing culls, overripe fruit, and a poor grade of No. 2 fruit on the market. Even when the fruit grower does not meet and sell direct to the ultimate consumer, he is hurting his market just as much if he sells such undesirable fruit to an itinerant truck driver or other "middle man," who indulges in this harmful practice. Properly matured fruit, of a

ripeness which will insure proper completion of the ripening process, and honestly marked fruit of a sufficiently high grade as to insure consumer satisfaction and repeat business, is in itself the best salesman a fruit grower can employ.



Will All Fruit Growers Soon Irrigate?

AFTER passing through several months of what is recorded as the driest season American people have ever witnessed, the discussion of irrigation is becoming common outside of the so-called arid sections. In the Far West, shortage of irrigation water not only may threaten a decided decrease in size of crop and fruit, but tree injury is also possible. Although water is not the only requirement for heavy fruit production following the period of bloom, it does constitute a most important one. Water in increasing quantities is also being required by fruit growers for spraying and in the newer practice of washing fruit.

Because of the growing interest in the matter of irrigation, we are running in this issue a special article on that subject. There are many kinds of irrigation, but not all are adapted to the same conditions. One must consider the location and source of water. If a grower can tide his orchard over a single month's dry spell, it may make the entire difference between profit and loss on the season's work. Size and quality of crop speak a plain language at the sales counter, while preparedness is much surer than rain insurance.

Without an irrigation setup, emergency measures may sometimes be taken to prevent crop or tree damages under conditions of extreme drouth. Thinning is a practice whose value increases greatly when trees are suffering from a lack of soil moisture. More than the normal excess fruit should be removed under such conditions, so that the trees may survive the season in addition to bringing a fair sized crop to maturity. The removal of culls and low grade fruit would be a common sense practice at any time, but of particular value during an abnormally dry year. Summer pruning has also proved a valuable practice under some conditions to meet the emergencies of a severe drouth. Young trees and small fruits may often be kept from dying by hauling the water, and even bearing trees are sometimes saved by application of a suitable mulch. Removal of old fruiting canes in raspberry fields immediately following the harvest season will also prove of inestimable value. When the orchard soil becomes solidly packed during dry weather, a scratching of the surface with suitable tillage tools is often very desirable in order to prevent run-off when rains do come.

J. T. Bregger

WATERED PROFITS

from MODERN IRRIGATION

By I. W. DICKERSON

THE severe dry spells of the last three or four years and the unusually dry start for this season have shown commercial orchardists more and more clearly the vital need of having some sort of orchard irrigation if the trees are to be thrifty and the fruit mature and color properly. Methods and amounts are well standardized in localities where irrigation is the normal practice. However, they are often quite a problem for the fruit grower who needs only occasional irrigation most seasons and some years not at all, and who must furnish his own water supply and equipment and usually must do his own planning and in many cases his own installing. In most cases the amount of water available will be the deciding factor, although the type of soil, the strength of the winds, the probable severity of the drought, the contour of the surface, and so on, must all be considered.

Surface or Furrow Irrigation

For the level or gently sloping orchard near a lake or river, or where one can go down a few feet and strike a copious supply of water, the surface or furrow method of irrigation requires by far the least investment for equipment, and the time and labor needed are usually no greater than with other methods. Where the soil is sandy it requires closer and more numerous furrows, with less time required for adequate penetration.

The furrow method can be used on gentle slopes by pumping the water to the highest side before releasing it, with the furrows following the contour lines, but is hardly practicable where the surface is uneven.

Experience has shown that the single stage centrifugal pump is best adapted for raising large quantities of water to a small height. These are low priced, simple in construction, with few moving parts to wear and give trouble, and will handle a considerable proportion of silt without damage. Where the distance to the water is not over 20 feet, a side suction horizontal centrifugal pump

is usually placed in a pit as near the water level as possible. Where the distance to water is over 20 feet, it is common to put a vertical centrifugal pump in the well below the water level and have it driven from a pulley at the top of the vertical shaft.

Most orchard surface irrigation plants use a six-inch centrifugal pump, which should furnish around 900 gallons per minute for a 20 to 40-foot lift, will need about one-third horse power for each foot of lift or head, including the pipe friction, and should irrigate about 40 to 50 acres under average conditions. The pipe friction is quite important, being about 12 feet for each 100 feet of six-inch pipe for pumping 1,000 gallons per minute, but only three and one-fourth feet per 100 feet of six-inch pipe when 500 gallons per minute is pumped. Hence one can easily see the importance of keeping down the rate of pumping or of using large delivery pipe.

It is important that the power unit be not overloaded, and it is quite common to use a tractor for the power, as this gives plenty of power and does away with the investment

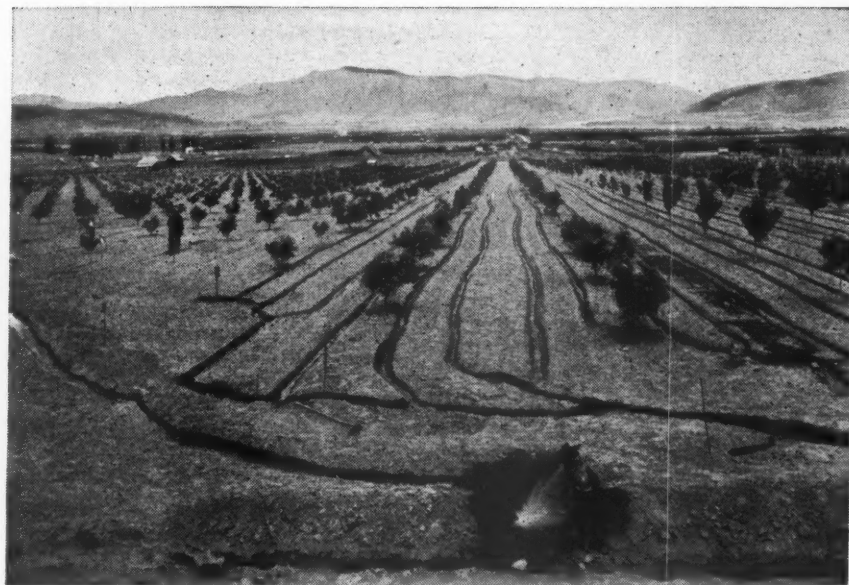
in a special motor. Electric power is convenient to use where available, the proper size motor being determined by the capacity and the pumping head.

Sprinkling Irrigation for Orchards

Many fruit growers have become much interested in the sprinkler method of orchard irrigation, especially where water is scarce or has to be pumped from a considerable depth. They have thought that the use of sprinklers caused less wastage of water to the subsoil, put the water where it did more good to the trees and to the cover crop, helped in giving quicker and more uniform utilization of fertilizers, and by keeping the foliage clean of dust would perhaps improve the growth and coloring of the fruit.

Extensive tests of both high overhead and of ground sprinklers for orchard irrigation seem to show definitely that sprinkling irrigation requires much less water for a given benefit to the trees and cover crops, is better adapted to orchards in sod or legumes, makes better use of fertilizer, and produces larger leaves

(Continued on page 15)



Furrow irrigation, long a common practice in the West.

AMERICAN POMOLOGY

*A Page Conducted in the Interests of the
American Pomological Society*

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SENIORITY among A. P. S. life mem-
bers apparently has not yet been settled.
First, Wm. B. Alwood, of Greenwood,
Va., was suspected of holding the honor,
which was promptly challenged by Charles
W. Garfield, Grand Rapids, Mich. The
latest contestant for age honors is Charles
Black, Hightstown, N. J. In a letter dated
July 10, he says, "I will be 91 years
old August 4." Mr. Black tells of his
pleasure in reading the A. P. S. Proceed-
ings, but states that he has not been able
to attend a meeting since one held in New
York City, where he met Treasurer H.
C. C. Miles. Some years ago Mr. Black
developed a nursery business which he
sold when it became too large. Since then
his chief interests have centered in grow-
ing fruit, now having 50 acres in apples.

It has been the source of much satis-
faction to contact so many of the older
life members of the society, and we hope
that more of them will write either to
President Pickett or Secretary Lantz.

Relief Gardens

Your secretary is again back in the of-
fice. A three-months' furlough from the
State Experiment Station flung us rather
unexpectedly into a new field of endeavor
—that of assisting the State Emergency Re-
lief Committee in organizing and promot-
ing the relief gardens project in each of the
99 counties of Iowa. The federal govern-
ment furnished the seeds to all families
on relief. It was our lot to assist in or-
ganizing the distribution of seeds and the
necessary inspection service. The ready
acceptance of the garden project by the
counties and by those on relief was a source
of real pleasure in assisting with such a
program. Gardens, however, were serious-
ly damaged because of the unprecedented
and widespread drouth through April and
May.

Gardens for families on relief are re-
quired because: (1) They provide some
employment for the family, (2) they pro-
vide much necessary food, and (3) they
tend to reduce the cost of relief. Relief
gardens provide vegetables with an aver-
age value of \$30 or more per family.
Many gardens greatly exceed this figure,
being worth three or four times this
amount. This year, in Iowa, the program
sponsored 50,000 active relief gardens
which, had the weather man done his part,
would have had an aggregate value of
more than \$1,500,000.

Home gardening is one branch of horti-
culture that is receiving a tremendous push
forward. Many families in straitened
circumstances are turning to the garden
because it does cut the cost of living and
provides necessary food items with which
to maintain a balanced diet for the family.

Page 6



CHARLES BLACK

July Crop Estimates

Have you noticed the July estimate for
the apple crop issued by the U. S. D. A.?
The total production estimated for the
United States is 112,011,000 bushels, as
compared with 143,827,000 bushels pro-
duced in 1933. Those fruit sections and
growers who have a reasonable crop will
doubtless use every effort to produce as
much marketable fruit as is possible, in
order to cash in on what should be a
seller's market this year.

The July estimates show Washington in
the lead with 32,300,000 bushels. New
York comes second with 10,000,000 bushels.
Virginia and California are both above
7,000,000 bushels, while Pennsylvania,
Michigan and Oregon will produce right
around 5,000,000 bushels each. Those
fruit sections with good or moderate crops
ought to be in line to make some real
money this year. A failure or short crop
is, of course, a disaster for those whom
it affects. Nevertheless, a silver lining on
some of the fruit growers' clouds is now
appearing on the horizon.

Orchard Tours

Orchard tours are already under way.
Michigan and New Jersey led the way,
and other states were soon to follow. Or-
chard tours offer unusual opportunity for
observation and much valuable information
is thus made available which may be ap-
plied in one's own orchard. Why not re-
fer to orchard tours as "open air horti-
cultural conventions"?

AMERICAN FRUIT GROWER

Northern Great Plains Horticulturists To Meet

An organization composed of official hor-
ticulturists, nurserymen and orchardists of
the Upper Mississippi Valley and Canada
meets periodically for the purpose of stud-
ying the fruit, vegetable, and ornamental
breeding work being done in the Upper
Mississippi Valley. This group was or-
ganized nearly 20 years ago and has held
meetings in Minnesota, North and South
Dakota, Iowa, Wisconsin, and in the pro-
vinces of Ontario, Manitoba and Saskatche-
wan. Methods, materials and results ac-
quired in breeding fruits and ornamentals
are studied in the field. Other phases of
horticulture being carried on in the vicin-
ity of the tours are also inspected, such
as nurseries, canneries, etc.

The fruit breeding projects of these
states and provinces have yielded some
marvelous new varieties of fruits. To visit
these fruit breeding projects reveals an
amazing amount of work with great prom-
ise for the future development of hardier
and better varieties yet to come. In this
region fruit growing for home use, for
local markets and for commercial purposes
has received tremendous impetus because
of the fruit introductions originated through
the efforts of fruit breeders of this region.

So it is with unusual interest that the
Great Plains Section of the American So-
ciety for Horticultural Science is to meet
this August. The tour is scheduled to
start at Fargo and to end at Morden,
Manitoba. Prof. A. F. Yeager, horti-
culturist, North Dakota Agricultural College,
Fargo, is secretary and in charge of the
itinerary.

It is an almost undisputed fact that an
apple grower cannot blame his neighbor
when he fails to control codling moth in
his own orchard. In other words, the
codling moth is a local problem. With
apple maggot, on the other hand, where
the maggot flies travel longer distances,
the surrounding orchards may be a much
greater source of infestation.

Have you read the Proceedings of the
49th convention of the A. P. S.?

An annual membership in the A.P.S.,
which will secure the above report for you
together with a subscription to AMERICAN
FRUIT GROWER, will cost you only \$1.25.
Please write the secretary, H. L. Lantz,
Ames, Iowa.

H. L. Lantz

AUGUST, 1934

New Spray Combinations for Codling Moth

By B. F. DRIGGERS

THE increased severity of codling moth attack on apples during the past several years, together with the placing by the Federal Food and Drug Administration of a tolerance on the amount of spray residue allowed on fruit when sold, has intensified the search for a satisfactory substitute for lead arsenate as a control for the codling moth. Hundreds of new and old compounds have been examined and tested by state and federal investigators working in the numerous apple growing sections of the country. Nicotine, which has been available for years in the free or sulphate form as a control insecticide, principally for soft-bodied sucking insects, was examined and tested alone and in combination with other insecticides. Its advantages are its extreme toxicity to the codling moth, plus the fact that it disappears from the fruit before or shortly after harvest, leaving no poisonous residue. Its disadvantage was the fact that it was effective only at the time applied or for a few days after application. The problem in respect to this compound was to so combine it that when applied a poison coating would be maintained on the fruit and foliage for a period of weeks. This would reduce the number of applications necessary and thereby lower the cost.

The New Jersey Agricultural Experiment Station began work on this problem several years ago. The work at this station resulted in the development of nicotine tannate as a substitute for lead arsenate in the control of codling moth, and has been recommended in New Jersey for several years for those growers who wished to avoid washing the fruit. The formula developed called for one pound of 50 per cent free nicotine and two pounds of a special tannic acid derived from Chinese galls to 100 gallons of water. Applications at 10-day intervals were necessary to obtain a control equal to the standard lead arsenate spray. This nicotine tannate formula and schedule proved more expensive than lead arsenate on the basis of spray gallon for spray gallon. It was desirable to extend the time period of effectiveness or to reduce the nicotine charge, making a less number of applications necessary with present concentrations or making it possible to use lower concentrations with present number of applications.

During the summer of 1933 experiments were run to test materials desired to fix the nicotine more firmly so that a given spray application would remain effective over a longer period of time. It was found that fused bentonite-sulphur added to nicotine tannate in the spray tank was superior to nicotine tannate alone. Twice as much nicotine was retained on the fruit and foliage sprayed with nicotine tannate and fused bentonite-sulphur and this resulted in a better control of codling moth than that obtained with nicotine tannate alone. The apples sprayed with nicotine tannate and fused bentonite-sulphur were better protected from first brood codling moth attack than apples sprayed the same number of times with the standard lead arsenate treatment.

In this series of block tests a combination of one pint of nicotine sul-

phate, eight pounds of fused bentonite-sulphur and two pounds of a neutral soap spreader to 100 gallons of water, applied the same number of times as the standard lead arsenate, produced more clean and salable apples than the standard lead arsenate. Likewise, a combination of one pint of nicotine sulphate, eight pounds of bentonite without sulphur and two pounds of a neutral soap spreader to 100 gallons of water produced more clean and salable apples than the standard lead arsenate applied the same number of times.

The experiments with nicotine sulphate and nicotine tannate combined with fused bentonite-sulphur for codling moth control represent only one season's work. Further work is necessary to determine the best combination of materials and the effect of these combinations in codling moth control in other apple growing sections.

Eradicating the Peach Borer

By Oliver I. Snapp, U. S. D. A., Ft. Valley, Ga.

THE peach borer is one of the most serious of the insects that attack the peach tree. Each year it directly or indirectly causes the death of many peach trees in both home and commercial orchards. The injury is done by the larvae as they feed on the

growing tissues of the tree. Young trees are sometimes completely girdled by the insect, and though older trees are less likely to be completely girdled, they are often so severely injured that their vitality is lowered and their resistance to other insects or diseases reduced to such an extent that some secondary pest will complete the destruction of the tree. The presence of borers in a peach tree is usually indicated by gum, particles of wood, and frass at the base of the tree.

This insect also passes through four stages during its development. The winter is passed in the larva, or borer, stage within the tree. The eggs hatch in eight or nine days in midsummer. Upon hatching the little larvae crawl or fall to the lower part of the tree trunk and usually enter it at the surface of the soil. With favorable feeding conditions the larvae attain considerable size within a few weeks. There is but one generation annually.

The use of paradichlorobenzene is the most effective means of controlling the peach borer. If it is applied properly and at the right time, a 90 to 100 per cent control may be expected. For peach trees four and five years old, use three-fourths of an

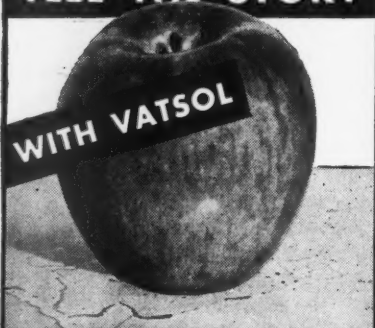
(Continued on page 11)



Applying paradichlorobenzene for peach borer control. Note handy cone-shaped container being used.

AMERICAN FRUIT GROWER

THESE PICTURES TELL THE STORY



Cleaning solution comes in immediate and complete contact with surface of fruit. Spray residue quickly removed. Note unbroken washing film on fruit.



Note globules of water. Waxy or oil-lead sprayed surface not covered by cleaning solution—hence danger of spotty or incomplete residue removal.

Study these pictures! They tell why a few pounds of Vatsol in the washing solution makes spray residue removal certain, as proved by Experiment Station tests... why leading growers who used Vatsol last season did not report a single rejection!

Vatsol cannot harm the fruit or impair its keeping qualities. Washing with a Vatsol Solution costs less than $\frac{1}{2}$ ¢ per bushel!

Dealers in every apple section stock Vatsol. Write for explanatory leaflet and name of nearest dealer.

Note: Vatsol's success has encouraged imitations.... Accept no substitute for Vatsol.

TRADE
VATSOL
MARK

**AMERICAN CYANAMID
& CHEMICAL CORP.**
Insecticide Division

30 Rockefeller Plaza, New York City, N. Y.
224 Dwight Building, Kansas City, Mo. Azusa, California

COSTS OF APPLE WASHER and SIZER OPERATIONS

By C. L. BURKHOLDER and T. E. HIENTON

Purdue Agricultural Experiment Station

WHAT does it cost to grow, pack and market a bushel of apples? In recent years when the cost of production is often very close to the sale price, each orchard operation that makes up the total cost of placing a bushel of fruit in the hands of the buyer deserves careful study. Of course, the costs in each orchard are bound to vary widely but the actual cost of operating the apple washer and apple sizer at the Purdue Orchard at Bedford, Ind., will be of interest and the methods of figuring each item of expense can be used for any orchard.

Apple Washer

This outfit is an underbrush type with drying of fruit accomplished by means of an air fan and cloth wiper. Washer is run by a 3 H.P. motor and is operated in second gear, which gives a capacity of 500 to 600 bushels in nine hours. A washer of this type and size will now cost about \$700. Table 1 gives a summary of 1931-1933 apple washer costs.

Discussion of Table 1

1. The average cost of electric power for the washer for three years was 4.7 cents per 100 bushels or $\frac{1}{20}$ cent per bushel. The average for 1931 and 1933, the large crop years, was 4.5 cents per 100 bushels. For the light crop year of 1932, the cost was 5.6 cents per 100 bushels.

2. The total average cost of washing for 1931, 1932 and 1933 was approximately 1.5 cents per bushel. In the light crop year of 1932, when half the amount of fruit was run through the machine as in the other two years, the cost was two cents per bushel.

3. The cost per bushel increases as the amount of fruit put through the washer per year decreases. However, taking the cost figures on this

washer as a basis for figuring the cost of handling a crop of 2,000 bushels, it will be found that the cost per bushel is between six and one-half and seven cents. While this cost is five times the cost per bushel of that on a 12,000 bushel crop, it is not a prohibitive item of expense even for the small grower who wished to operate this size of apple washer and do no custom work for nearby growers.

4. Depreciation, interest, repairs and replacements constitute a total yearly charge of \$140 or about 85 per cent of the entire yearly washing bill on this cost study. If the matter of residue removal and better appearance of packed fruit is left out of consideration, it has been the experience of washing machine owners that a big part of this item of washing cost will come back to the Midwest operator each year as increased sales returns from B grade and drop fruit.

Apple Sizer

The sizer used is one of the standard weight machines with double sorting table and two eliminator belts. The sizer is driven by a $1\frac{1}{2}$ H.P. motor, which is about double the size actually required. Separate meters were installed on both sizer and washer and readings taken at start and close of each season. The summary of the 1931-1933 apple sizer power costs are found in table 2.

Discussion of Packing Costs

1. The average power costs for operating the sizer average about 23 cents per 100 bushels or $\frac{1}{40}$ cent per bushel.

2. If depreciation is figured at seven per cent, repairs and replacements at one per cent, interest on investment at three per cent, the average

(Continued on page 13)

TABLE 1

SUMMARY OF 1931, 1932 AND 1933 APPLE WASHER COSTS, PURDUE FARM, BEDFORD

Year	No. Orch. crates run	Power Cost @ 3¢ KWH	Depreciation @ 15%	Int. on Investment @ 3%**	Repairs & Replacements @ 2%	Cost of Acid	Cost of Labor	Total Cost per bushel
1931	15,948*	7.97	105.00	21.00	14.00	16.78	10.00	\$4.30
1932	7,600	4.32	105.00	21.00	14.00	8.00	7.60	\$4.30
1933	14,105	5.61	105.00	21.00	14.00	14.31	7.50	\$4.30

*—Will not average quite a full bushel to the crate.

**—A 6 per cent interest rate is charged off at the rate of 3 per cent when depreciation is included as an item of yearly operating cost.

STATE HORTICULTURAL NEWS

Ohio Plans Summer Meeting

THE Ohio State Horticultural Society is planning a statewide summer meeting at the Ohio Orchard Company, C. E. Dutman, manager, Milford Center, Ohio, for Thursday, August 16. The members of the society cordially invite fruit growers, their wives and families to attend this all-day meeting, and to visit one of the most successful large commercial orchards in the Middle West.

The orchards comprise about 120 acres in full bearing. An excellent crop approaching 40,000 bushels is in prospect. The orchard is equipped with irrigation, with water distributed by the ooze hose method. Two irrigations have already been made in most of the orchard. Irrigated Transparents, because of large size, are now topping the Columbus and Cleveland markets, most of this fruit running over two and one-half inches in diameter. A completely equipped building for cider manufacture will be seen. A large 50-gallon per minute sprayer mounted on Ford truck, which has done most of the spraying, will be demonstrated.

All roads leading to the orchard will be conspicuously marked at intersections by Ohio Orchard Company signs. Registration will begin at 9:00 A. M. and at 10:30 and at 10:30 tours will be started to visit important points of interest in the orchards. Extensive commercial exhibits of supplies, equipment and machinery for fruit growers will be featured from 12:30 to 1:30 P. M. The latest development in fruit cleaning, washing and drying equipment will be shown and demonstrated. The speaking program at the packing house will begin at 1:30. H. D. Hootman, secretary, Michigan State Horticultural Society, will make the principal address.

On the following day, Friday, August 17, the members of the society are co-operating with the Ohio Experiment Station in supporting their Orchard Day program. These two summer meetings are the outstanding events for Ohio fruit growers this summer.

F. H. BEACH, Sec'y,
Columbus.

Maryland Raising Clean Fruit

THE Transparent apple crop has been moved, and though not a heavy crop, the fruit was clean and commanded a rather good price. The crop of Duchess and Williams is not very large.

Dry weather has caused considerable difficulty in fruit size, and growers are thinning varieties that are heavily set.

There are many new spray rigs in the State this year; manufacturers state that they have sold increased amounts of spray material, and a few new washers are being purchased or home-made. With a reported 29 per cent crop of apples and a 10 per cent peach crop, growers are making a real effort to deliver a high percentage of better grade fruit from Maryland orchards.

The annual summer field meeting of the Maryland State Horticultural Society will be held at the E. D. McCain Hill Crest Orchard, near Frederick, in early August.

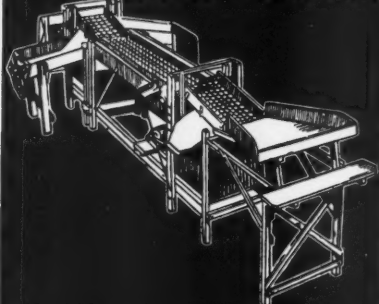
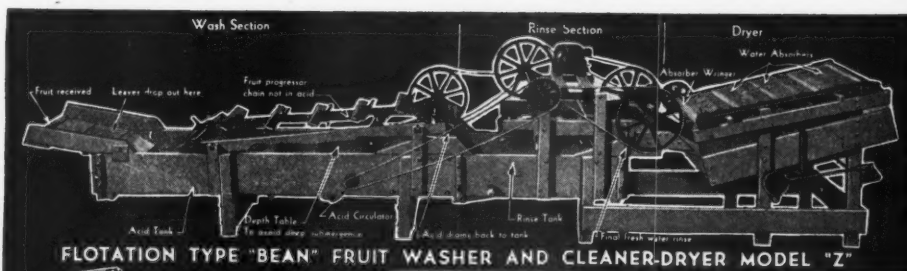
An inspection of plots thinned early and heavily as affecting annual bearing; plots sprayed in various ways to determine the difficulty of residue removal; an orchard tour; inspection and demonstration of spraying with a stationary spray plant; demonstration of one or more types of fruit washers; lunch; and a few short talks regarding persistent orchard problems, comprise the program for the day. All fruit growers are invited.

A. F. VIERHELLEK, Sec'y,
College Park.

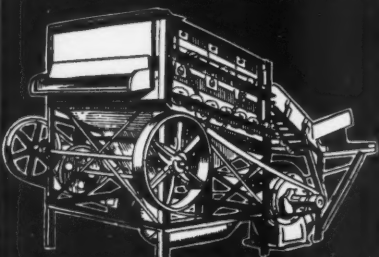
Utah Practices Summer Pruning

THE outlook for the fruit crop in Utah is much better than it was earlier in the season. A plentiful supply of irrigation water or rain is indispensable to the successful production of fruits in Utah because of this State's high and dry climate. Not a few of the peach growers were getting ready to destroy their fruit in an effort to save the trees when rain fell and improved the situation.

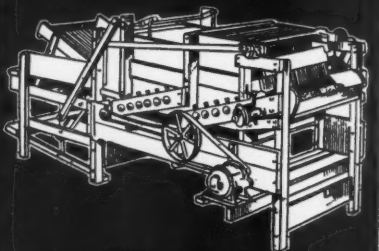
F. M. Coe, of the Department of Horti-



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BUILT IN SMALL AND LARGE SIZES.



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IN SEVERAL STYLES AND SIZES FROM
GROWERS MODELS TO LARGE
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FRUIT WASHING IS EASY Inexpensive and Necessary

Necessary because it gives you bright clean fruit and better prices.

Necessary because it enables you to comply with the tolerance restrictions.

Smart growers are spraying diligently to protect their fruit and washing to protect their sales. They tell us that washing is less complicated than other production operations. That washing actually makes a profit from better sales of clean fruit.

Bean now makes two sizes of Flotation Washers with unexcelled efficiency that are actually cheaper than home made washers of equal capacity.

Bean Flotation washers actually remove the visible residue without which washing is incomplete. Some washers remove lead and arsenic but leave the fruit covered with visible residue giving it the appearance of not having been washed.

We want you to fully understand that washing is a money maker for you. Don't decide until you get all the facts. Write today for complete information on Packing House equipment, Flotation and Brush type washers.

Ask for catalog No. 15.

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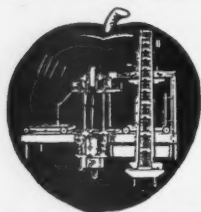
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ARSENIC residue

With POMO you can readily meet the new Government tolerance for lead and arsenic. This wetting and degumming agent was thoroughly tested last year in field experiments and successfully used by many growers. Added to the hydrochloric acid washing solution, POMO is easy to use—washes better and economically, costing $\frac{1}{4}$ ¢ per bushel.

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MOUNT GILEAD, OHIO

culture, Utah State Agricultural College, Logan, has issued a statement in which he shows how summer pruning of fruit trees may be practiced as a means of conserving the supply of orchard moisture. "It has been calculated that a peach tree during one season will evaporate 3,000 gallons of water, weighing 11 tons," he said. "An acre of trees will evaporate about 300,000 gallons, or the equivalent of 11 inches of rainfall, or irrigation water." Mr. Coe said summer pruning, where water is limited, should have no harmful effect if carefully done, beyond that of reducing the size and bearing surface of the trees and reducing root growth which may reduce the size of the crop borne the following year. He said it is much better to reduce the size of the next year's crop in this manner than to risk the life of the trees.

F. L. W. BENNETT

QUAKER STATE NEWS

THE Pennsylvania State College is intending to devote some time to the breeding of hardier varieties of peaches and sweet cherries. If those of you who live in localities where winter hardness of the peach and sweet cherry was an important factor this year will aid in observing and reporting named varieties or seedlings of these two fruits, you will render a great service to the growers and to the college. It is hoped to visit such winter resistant trees this late summer and to secure from the more promising of them propagation wood with which to begin a stock of parent material for breeding.

Please take time to notify R. H. Sudds, Department of Horticulture, State College, of any such hardy trees. A post card will do. Be sure to note carefully the location of such trees to avoid errors if any of them are considered worthy of propagating.

Green Apple Aphis Threatens Apples

Annually the green apple aphis migrates in late June from some other host to the apple tree. This year the movement has been very large and the young aphids with migrants are abundantly infesting water sprouts and starting in on terminal clusters, reports Extension Entomologist H. E. Hodgkiss.

The breeding during the week of June 24 was exceptionally heavy, and if the present temperature levels continue, fruit growers may have a serious condition to contend with. All orchards do not show the same conditions, but in nearly 100 orchards in 26 counties visited between June 18 and June 30 the water sprout infestation indicated an unusual situation, Mr. Hodgkiss says.

In past years it has been shown that a remarkable decrease in apple aphid infestation occurs where water sprouts or infested terminal growth have been removed before the new brood of winged aphids have developed. Where there is an abundance of the lice on such growth at this time, such a practice should reduce the danger of fruit damage tremendously, Mr. Hodgkiss explains.

Spraying of the trees with nicotine sulphate and soap at the rate of one pint of the nicotine and five pounds of dissolved soap in 100 gallons of water, or using one pint of the nicotine in the fourth lime-sulphur-lead arsenate cover spray should give a suitable suppression of the aphids, according to Mr. Hodgkiss.

R. H. Sudds, Sec'y,
State College.

HORTICULTURAL NEWS FROM THE TALL CORN STATE

AT THE present time the southern half of Iowa is having one of the worst droughts in the history of the State. Our apple crop has been cut down to somewhere around 35 per cent of a normal crop and present prospects are not very bright for good quality. Summer apples were small in size and many not marketable. Fall apples will be the same but if rains come soon winter apples will mature in good shape.

The Iowa State Fair will be held at Des Moines, August 22 and 31. Cash premiums amounting to \$1,423 are offered in the fruit department.

The 69th Annual Convention of the Iowa State Horticultural Society will be held in Memorial Union Building, Iowa State College, Ames, November 15, 16 and 17, 1934. Several of the affiliated societies will hold their annual meetings at the same time. Plans are being worked out for a very strong program.

R. S. HERRICK, Sec'y,
Des Moines

Arkansas Prospects Declining

WITH short fruit crops over the nation and good yields here, it seemed as though old Arkansas was due for a break this year, but a blazing sun in cloudless skies is reducing our prospects.

Peaches and grapes, now nearing maturity, need rain. Apples, though also needing moisture, are hanging well up to the present. Worm control is still pretty fair.

The report has reached us that some growers in other sections are shaking the fruit to save their trees. We have not yet come to such measures.

THOMAS ROTHROCK, Sec'y,
Springdale

Tenn. Society Moves Hdqrs.

THE Tennessee State Horticultural Society was most unfortunate in having its office and all contents destroyed by fire in the early morning hours of January 18. This calamity seriously interfered with the operations of the Society for some time. However, recovery is coming about and we are now in position to render our usual services to the membership. Headquarters of the Society have been moved from Knoxville to the Department of Agriculture, Memorial Building, Nashville.

E. M. PRATHER,
State Horticulturist.

Washington Sees Early Harvest

THE summer meeting of the Northwest Horticulturists, Entomologists and Plant Pathologists was held in Yakima on July 18 and 19. Following the sessions, a trip was made to Rainier National Park over the new highway from Yakima to the Park. R. C. Palmer of the Summerland, B. C., Experiment Station was chosen president for next year. The place of meeting for next year was selected to be Kelowna, B. C. Ben Hoy of Kelowna will act as local secretary.

July weather to date indicates an early fall, the first slight rain coming on July 15. Apples are as well colored the latter part of July as is common in late August. Red Delicious sports are already showing full color. The Bartlett pear crop has sized well during the relatively cool July

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weather. Very good quality fruit is indicated at this time.

The second brood of codling moth has reached the peak without severe damage to the apple crop. If cool weather continues, the third brood that was generally anticipated earlier in the season may not develop. It is too early, however, to assure anyone that worm damage will be light this fall. Growers who have practiced orchard sanitation in the form of complete removal of thinnings from the orchard can have the greatest assurance that no further worm damage will be experienced if fruit on the trees is clean during July.

W. A. LUCE,
Wenatchee.

Michigan Holds Summer Meeting

COVERING several typical orchards of the northern section of Michigan's western fruit belt, the Michigan Horticultural Society held its 1934 summer meeting and tour during the second week of July. In almost every case the orchards visited were being managed by the second or third generation of the original owner who had cleared the land and planted the oldest trees.

Although the Traverse Bay and surrounding areas are noted mainly for their sour cherry orchards, there are many fine apple orchards, particularly of the Spy and McIntosh varieties. Scenery and abundant living are also striking characteristics of the northwest Michigan fruit belt.

Highlights of the State horticultural tour included a visit to the largest bearing apple orchard in Michigan (640-acre Lakeview Orchards, Manistee); the largest sour cherry packing plant in the world (Traverse City); a view of Mission Peninsula in Traverse Bay, where 250,000 cherry trees are visible from one point; and the first-hand contacts with many of Michigan's leading fruit growers made possible by these summer get-togethers.

Other valuable lessons of the tour concerned a variety of profitable orchard practices, including the use of barnyard manure in fertilization, thorough and timely spraying practices, fruit thinning, and proper selection of varieties. Much credit for the success of this summer's meeting is due H. J. Lurkins, of St. Joseph, president of the Michigan society, and Don Hootman, its able secretary.

J. T. B.

ERADICATING THE PEACH BORER

(Continued from page 7)

ounce of the chemical per tree, and for trees six years of age and older, use a full ounce dose. The material should be applied in the fall at the end of the oviposition period of the insect, which is from September 1 to October 20, depending on the latitude. No preparation of the soil is necessary except to smooth the surface for about a foot from the tree trunk with the back of a shovel. The material is applied in a continuous band about one or one and one-half inches wide around the tree, and about one or one and one-half inches from the trunk. Several shovelfuls of soil are then placed on the ring

Pest Control Problems...

are less troublesome to growers who follow the counsel of their local Station, and General Chemical Company's advice on the use of



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of crystals in the form of a mound and packed with the back of a shovel. It is advisable to tear down the mounds 28 days after applying the chemical to the younger trees, in order to remove all unspent crystals and to allow the confined gas to escape; and as an added precaution against injury to the older trees, it is well to tear down the mounds six weeks after making the application to trees six years of age and older.

As a rule paradichlorobenzene should not be used on one, two, and three-year old trees on account of the danger of tree injury, although in certain areas, particularly in the Middle West, a great many trees within these age limits have been successfully treated without injury of consequence. If the chemical treatment is not used on the younger trees, they should be freed from injury by the insect by removing the borers with a sharp hawk-bill knife in the fall of the year. In worming peach trees the incisions should always be made vertically, if possible, and care should be exercised not to injure or cut any more of the sound wood than is actually necessary in removing the borers or crushing them in their burrows.



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AMERICAN FRUIT GROWER

FALL FASHIONS



No. 670—Jaunty Model. Meet the fall season with chic in this delightfully lovely and wearable dress of rayon novelty that suggests woollen. Sizes 11, 13, 15 and 17 years.

No. 605—For School Wear. Designed for sizes 8, 10, 12 and 14 years. Size 8 requires 2½ yards of 35-inch material with ½ yard of 32-inch or wider contrasting and 6 yards of braid.

No. 576—A Darling Blouse. Designed for sizes 14, 16, 18 years, 36, 38 and 40 inches bust measure. Size 16 requires 2¼ yards of 39-inch material.

No. 642—New Fall Togger. Here's an attractive dress for early fall wear in favored black crepe satin with white contrast. Sizes 36, 38, 40, 42, 44, 46 and 48 inches bust measure.

No. 529—For Smart Matrons. Designed for sizes 16, 18 years, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 36 requires 4 yards of 39-inch material.

Patterns may be secured by mail, postage prepaid, at 15 cents each from FASHION DEPARTMENT, AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland, Ohio. Be sure to state size required. Enclose 10 cents additional for new Fall and Winter Fashion Magazine (15 cents where no pattern is ordered).

APPLES THE YEAR ROUND

Says MARY LEE ADAMS

HURRAH! for the Cold Storage that receives our apples at the end of harvest and makes it possible for us to eat apples the year round. How good they taste considering the months that have passed since they left the parent tree. But when July rolls by, it's three cheers for the first fresh summer apples. Once more housewives revel in recipes suited to the season and to the variety of the apples to be used.

We do not use December cooking methods with the summer fruit, but since in one small booklet there are to be found 200 ways of cooking apples from a single apple state, we need never have any difficulty in finding an appetizing recipe suitable to the time and to the apple at hand. From the first "B" beginning with "Baked Apples," straight through the savory alphabet to the "W" group, we find inviting ways to make the best use of the king of fruits. Try this—

Apple Custard

4 egg yolks, ½ cup of sugar, 1 pint grated apple, 4 egg whites, 3 tablespoons powdered sugar.

Beat yolks well and add sugar. Cook two minutes; remove from fire, and add grated apple slowly. Pour into a serving dish and cover with a meringue made of white of eggs beaten stiff and powdered sugar. Bake until meringue is light brown.

This dish combines many excellent qualities. It's delicious, it's healthful, it's good to look at, which makes it a nice dish to serve to company. When it appears on my own table I take the liberty of adding a dash of vanilla and a sprinkle of nutmeg to the scraped apple. And to think we could have a totally different and equally delightful dish made from apples nearly every day of the year. Again—Three cheers for apples!

When to Transplant

THE question when to transplant has brought doubt and annoyance to many amateur gardeners. So often other matters press hard upon us in the accepted season. But do not despair. If prevented from transplanting at the right time, then choose the wrong. Resort to emergency planting. May it bring you the joy it brought me.

AMERICAN FRUIT GROWER

Every housewife will admit that she owes some valuable discoveries to emergencies. The too short dress pattern is eked out by some combination which proves charming. The ingenious placing of an ornament to cover a temporary wall defect is an obviously "right" that it remains long after the original need has passed.

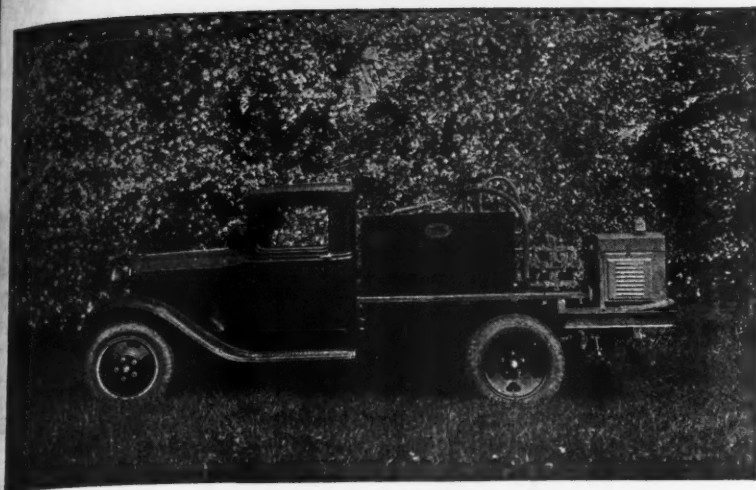
Which of us has not found herself at times confronted by unexpected guests and a cupboard as bare as old Mother Hubbard's. In desperation the hostess concocts a dish from the materials on hand, though she has never before thought of combining them. To her pleased surprise the emergency dish turns out very savory and appetizing and henceforth takes an honored place among her choice "specials."

The only way to find out whether a thing can or can't be done, is to try it. That's why we tried emergency planting last mid-summer. Owing to hampering circumstances July with its heat was upon us and the borders were still bare. Too late! Too late! "Better wait until next year," counseled friends whose superabundant bloom mocked our envy.

But it seemed to us we just couldn't go through the whole season without any flowers. We would beg, or joyfully accept budding and blooming plants. We took them up carefully and hurried them into good soil before the roots could dry.

They were set fairly deep in holes thoroughly soaked with water. The earth was scraped right in again to the top of the still floating mud and firmed around the roots. A layer of dry powdery earth formed the dressing, and, as a further mulch to protect the roots from the drying heat of the sun, a light layer of straw was placed about them. Straw has risen in our esteem as a gardener's friend.

Constant watering followed, and not a single plant so much as drooped. In two weeks, though the original blossoms had passed, many buds had opened and fresh ones were forming on rapidly growing plants. The garden operations, though somewhat limited, had never been so rewarding. The lesson seems to be that if the roots are kept moist and cool, no summer season is too late for transplanting.



Spraying equipment used by New York Experiment Station in solving fruit growers' insect and disease problems. This truck combination provides the quickest and most efficient spray service possible.

APPLE SIZING COSTS

(Continued from page 8)

cost is increased to 55 cents per bushels or slightly more than half cent per bushel. This does not include the man labor required in the sorting table and in packing.

TABLE 2

SUMMARY OF 1931, 1932 AND 1933 APPLE CRATE POWER COSTS, PURDUE FARM, BEDFORD, INDIANA

No. Orch.	Total Cost	Cost per
Crates run	@ 3c KWH	100 bu.
15,948	3.98	\$0.025
7,600	2.16	0.028
14,105	3.72	0.026

the Purdue Orchard at Lafayette where the same model of sizer is being used, the labor cost for sorting and packing in standard bushel baskets has averaged approximately five cents per bushel.

3. The average total cost of washing, sorting, sizing and packing in these studies has been approximately seven cents per bushel. This does not include hauling to or from the packing shed. (Labor cost will average about 20 cents per hour.)

4. Still another item of packing expense is a charge for the use of the packing house and packing equipment other than the washer and sizer. This will vary widely in each orchard. A standard method is to charge off nine per cent of the cost of the building each year. This will cover taxes, depreciation, interest on investment, upkeep and insurance. A packing shed which cost \$2,000 would constitute a yearly packing cost item

of \$180 or one and one-half cents per bushel on a 12,000 bushel crop.

N. Y. Loses Many Trees and Bees

SPEAKERS at the annual summer meeting of the New York Horticultural Society held recently at Geneva brought out the fact that the 1933-34 winter was the most severe in history from the standpoint of fruit tree and bee casualties. In western New York the weather was colder than any ever recorded or in the memory of living fruit growers.

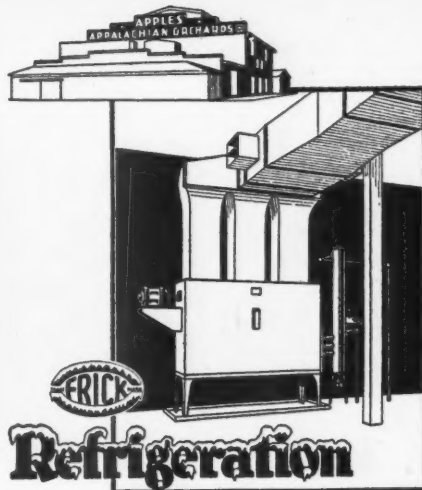
There are over six million apple trees of bearing age in New York State. Latest estimates by the State Department of Agriculture show that 16 per cent of these, comprising about 735,000 trees (21,000 acres of commercial orchard) or about a million trees including the non-commercial orchards, were killed outright. In addition to this 16 per cent, about 26 per cent or over 1,700,000 trees are "cripples," some of which will survive. Fifty-eight per cent were left uninjured.

Fifty per cent of the New York bee population also died in the 1933-34 winter. In Ohio the loss was 30 per cent, with injury diminishing toward the West. In other north-eastern states, however, the loss was quite heavy. It was recommended by Cornell University authorities that weak colonies should be immediately rehabilitated with package bees from the South and requeening also done where necessary.

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Handles fruit with rubber cups—cannot bruise. Divides into three sizes. Grades through soft rubber rings—interchangeable to any size. Operates by foot treadle. Takes little space. Complete with bins and hopper. Weight 100 lbs. A marvel of efficiency. Write for booklet. Motor drive only \$40.00 additional.

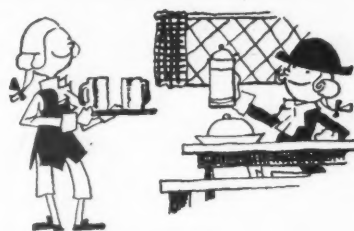
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CUT FENCING COSTS 80%

Farms now using 110 volt alternating current save 80% with Electric One-Wire Fencing. Uses one strand of common barbed wire; one-quarter the ordinary number of posts; requires one-fifth the labor; no gates. Write—

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SALESMEN WANTED

SALESMEN WANTED—MANY STARK SALESMEN make more than \$200.00 per month during spare time. You can do as well. Pleasant outdoor work. No experience necessary. Big PAY WEEKLY. We furnish Big Sales Making Outfit Free. Write at once for full information. If you can't sell, Buy Stark Trees, WRITE FOR CATALOG. STARK NURSERIES, Box C-184, Louisiana, Mo.

WANTED—FRUIT GROWERS TO SELL OUR complete line of Fruit Trees. Cash commission paid weekly. TITUS NURSERY COMPANY, Waynesboro, Va.

TEACHER'S REGISTRY

TEACHERS: WE HAVE VACANCIES, RURAL, grades, high schools; all departments. TEACHER'S EXCHANGE, Kansas City, Kans.

WANTED—FOREMAN POSITION

POSITION WANTED AS PACKING HOUSE FOREMAN. Married man with 10 years' experience as foreman; 26 years in fruit. J. R. HENRY, Okahumpka, Florida.

"EVERY GROWER'S" PAGE

By T. J. TALBERT

THE fruit growers' problems do not end with the production of a high quality product. In fact, to many growers, picking, handling, packing, and selling problems are the most difficult of all. The harvesting season may bring more grief and worry than all the other operations combined. Some of the elements of risk are beyond control and to these we become more or less accustomed. There are, however, factors that can be affected by efficient management and to these the grower should apply himself. Careless management and wasteful practices may increase the cost of harvesting and thus eliminate all chances for profit.

Picking

There are many indications or signs which growers use in determining the proper time to pick apples. Most of these are unreliable. When the seeds turn brown may be an indication of ripeness, although with some varieties the seeds may develop a brown color long before the apples are ready to pick. Neither is the development of a red or other color characteristic of the variety always an indication of ripeness. The ease with which the stems of the apple may be separated from the twig may be an indication of ripeness, although this is sometimes deceiving. It may be necessary for the apple to develop a proper flavor or taste; good color may be required; the green ground color under the skin of the apple may develop a tinge of yellow; and the apple may be moderately hard or soft at the proper picking time, depending upon the variety. To determine the right stage for picking apples, the grower must make a very careful study of all factors which go toward the making of maturity or ripeness.

Uniform Pack

There are many successful growers who have as a result of years of experience been thoroughly convinced that a uniform pack pays big dividends. One grower states that the uniform quality of his pack has been forced upon him. At first he was somewhat unwilling to accept it. The practice has been, however, the turning point in the successful management of his orchard. With him it is not a problem of marketing now, but of distribution, for the reputation of his pack is well known in the lead-

AMERICAN FRUIT GROWER

ing markets and fruit buyers compete for his crops. There are many theories advocated in connection with packing and marketing fruit, but the factor of uniformity has passed beyond a theory and is now an accepted fact among apple growers who have been consistent in its use.

Remedy for Cracking

Gentlemen:—My Stayman Winesap apple trees are eight years old and are bearing, but every summer many of the apples crack and are not salable. The cracks are always lengthwise of the apple and there are no other blemishes. Have sprayed many times. Please tell me the cause of this trouble, and whether there is a remedy. If not, it seems to me the trees should as well be taken out. —T. L., Missouri.

THE cracking of your Stayman Winesap apples is due to growth or nutritional conditions of the trees. As far south as your particular section in the Ozark region of Missouri, the Stayman Winesap apple will frequently crack just preceding the harvesting period.

There is no way we know at the present time of overcoming this serious drawback of the Stayman Winesap variety. The more nearly the producer is able to control the moisture supply of the soil, however, so as to keep the trees in fairly good growing condition throughout the season, the less likely the fruit is to crack just before harvesting time.

If there is a sale locally for the apples to be used soon after harvesting, it is possible that it would be better to keep the trees, although the fruit does often crack just before or at harvesting time. This is true because where you do top-work the Stayman trees at least four years would elapse before you could expect full crop from any other sort and were you to plant another variety in the place of the Winesap some eight to twelve years may elapse before profitable crops may be expected.

Birds Ruin Fruit

Glad you are giving us a better paper. Can you give us some information in preventing birds from ruining our berries, garden and fruits from March to September?—I. H., Louisiana.

THERE are a number of our common birds, such as Jay birds, Black birds, English sparrows, and others, that may do damage particularly to ripe fruits, such as cherries, grapes, plums, etc.

Some good fruit producers lessen the damage by such birds by planting several mulberry trees in or about the fruit planting. It has been found that the birds usually are much more fond of the mulberries than they are of the cherries, plums, grapes, or other fruits.

Some fruit growers have found that the cutting of short pieces of spray hose three or four feet long and hanging these among the branches of the trees will tend to repel the attack of the birds upon the fruit.

AUGUST, 1930

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ORCHARD TOOLS & SUPPLIES

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John Smith merchandised his fruit with Pioneer Myracol packing specialties and got better prices for them.

He increased the attention value and attractiveness of the pack. He protected the fruit against deterioration.

All these things can mean more money in your pocket.

Myracol Oiled Shreds are deep and clear in color—purple, green or red. Impregnated with pure mineral oil, they protect and add to display value.

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Box Caps, Liners and Fringes permit a better pack, protect against bruising and increase eye-appeal.

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TENT & AWNING COMPANY
130 Marietta St. Atlanta, Ga.

MODERN IRRIGATION

(Continued from page 5)

and fruit than the same amount of water applied by the furrow system.

The tests also showed ground sprinklers to be better than the overhead system, that they required less pressure, and that they did not wash off so much spray material. The reaction type seemed to give the best results of the ground sprinklers. The sprinkling system is most likely to be economically successful on light, sandy, hillside soils, where furrow irrigation would mean much expense for leveling and contouring and where there would be a heavy subsoil waste.

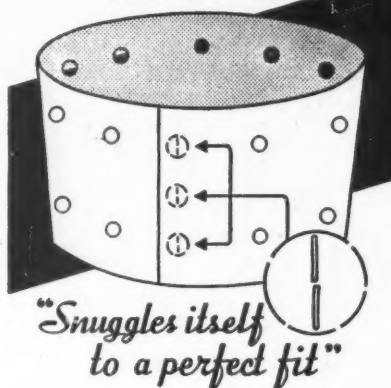
Porous Hose Irrigation

Porous hose irrigation is a new method of irrigation which seems to have many of the advantages and few of the disadvantages of the other types. A two and a half-inch porous hose made of canvas or other fabric with a tight weave is used, the water being pumped in at one end and the far end closed. When the hose becomes filled and a slight pressure is developed, the water leaks through the fabric in fine drops, thoroughly saturating the ground, but not wetting the leaves or foliage. Usually one row is thoroughly watered, then the hose is moved over to the next row, and so on. The cost is not high, there is less waste of water than with probably any other method, there is no damage to trees, and the water can be distributed over three feet variations in elevation with fairly uniform results.

The grower who is considering orchard irrigation for the first time is urged to consult his agricultural experiment station as to methods and equipment, as they may be able to save him time and money. In many cases they can direct the beginner to a nearby grower who has worked out some method which is successful for conditions in that locality. Bulletins on the various types of irrigation can be secured from several state experiment stations.

SPEED-Y-PAK BASKET LINER

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"Snuggles itself
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SUTHERLAND'S Patent Perforated Circle "gives" under pressure of the contents, permitting the liner to expand to a perfect fit. Made of high grade stock, in either green one side or plain. They come ready for immediate use without any assembling operation. Write for samples and prices. Sales territories open to reliable dealers.

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STAMP PADS

This year the growers, packers and shippers are using the New SPEED-MO Sponge Rubber Stamp Pad to mark their fruit containers. SPEED-MO Pads are especially fine for marking on wood and corrugated paper. They are the best for use with large type rubber stamps. If you're proud of your product MARK IT WELL. Clear, Sharp Impressions Guaranteed. A size and model for every need. Order yours to-day. State size and color.

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• • Came the CLIMAX • •



IT HAD been a good dinner, but not especially eventful. . . Then came the critical moment. The arrival of the coffee. . . Its rich, mellow fragrance filled the room. The honored guest cocked a calculating, half-dubious eyebrow. Took a thoughtful sip. Then he beamed over his cup! Warmest cordiality replaced his tired politeness of a moment before.

She was not surprised. She had

seen her coffee charm sterner men than he. But she was particularly pleased to see it happen tonight. *This* guest's good will meant so much to her husband. An important client of his firm.

Certainly, she thought, there is an added something in the flavor of Beech-Nut Coffee. Difficult to describe but unmistakable. Decidedly she was glad she had served Beech-Nut Coffee tonight!

Way up here grow the best coffees →

Coffees grown here are only fair (75% OF THE WORLD'S SUPPLY) →

Only poor coffees grow down here →

Beech-Nut Coffee really is unusual. Blended from precious mountain-grown varieties—very difficult-to-get—it has a richness and individual flavor all its own. Besides, it always reaches your kitchen absolutely fresh, because it's vacuum-packed.

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*Always fresh
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